

# CHICAGO POWER ELECTRIC® SYSTEMS

## 6 / 2 AMP, DUAL RATE BATTERY CHARGER

**Model 45005**

### SET UP AND OPERATING INSTRUCTIONS



Distributed exclusively by Harbor Freight Tools®.

3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.**  
**Failure to do so can result in serious injury.**  
**SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

Revised manual 08j, 09f

## SPECIFICATIONS

Input	120 V~, 60 Hz, 1.3 A
Output Power	6* & 2* A at 12 VDC; 6* A at 6 VDC
Battery Cables	6' 7"; 18 AWG
Line Cord	6' 6" long; 3-prong plug
Features	Ammeter Self-resetting circuit breaker



**\*Amperage is only present while connected to a battery.**

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

### SAVE THESE WARNINGS

#### **WARNING!**

#### **READ AND UNDERSTAND ALL INSTRUCTIONS**


**Failure to follow all instructions listed below may result in electric shock, fire, and/or serious injury.**

#### **WORK AREA**

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate equipment in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Equipment creates sparks which may ignite the dust or fumes.

3. **Keep bystanders, children, and visitors away while operating equipment.** Distractions can cause you to lose control.

#### **ELECTRICAL SAFETY**

1. **Grounded equipment must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the equipment should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.**
2. **Double insulated equipment is equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation  eliminates the need for the three wire grounded power cord and grounded power supply system.**

3. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
4. **Do not expose equipment to rain or wet conditions.** Water entering equipment will increase the risk of electric shock.
5. **Do not abuse the Power Cord. Never use the Power Cord to carry the equipment or pull the Plug from an outlet. Keep the Power Cord away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately.** Damaged Power Cords increase the risk of electric shock.
6. **When operating equipment outside, use an outdoor extension cord marked “W-A” or “W”.** These extension cords are rated for outdoor use, and reduce the risk of electric shock.

### **PERSONAL SAFETY**

1. **Stay alert. Watch what you are doing, and use common sense when operating equipment. Do not use equipment while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating equipment may result in serious personal injury.
2. **Avoid accidental starting. Be sure the Power Switch is off before plugging in.** Plugging in equipment with the Power Switch on, invites accidents.
3. **Use safety equipment. Always wear eye protection.** Dust mask, nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions. Always wear

ANSI approved safety goggles and a dust mask/respirator when using or performing maintenance on this equipment.

### **EQUIPMENT USE AND CARE**

1. **Do not force the equipment. Use the correct equipment for your application.** The correct equipment will do the job better and safer at the rate for which it is designed. Do not use the equipment for a purpose for which it is not intended.
2. **Do not use the equipment if the Power Switch does not turn it on or off.** Any equipment that cannot be controlled with the Power Switch is dangerous and must be replaced.
3. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing the equipment.** Such preventive safety measures reduce the risk of starting the equipment accidentally. **Always unplug the equipment from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.**
4. **Store idle equipment out of reach of children and other untrained persons.** Equipment is dangerous in the hands of untrained users.
5. **Maintain equipment with care.** Do not use damaged equipment. Tag damaged equipment “Do not use” until repaired.
6. **Check for breakage of parts and any other condition that may affect the equipment’s operation. If damaged, have the equipment serviced before using.** Many accidents are caused by poorly maintained equipment.

7. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.
5. Place the Battery Charger as far away from the battery as possible during charging.
6. Do not attempt to charge a battery with frozen battery fluid.

## **SERVICE**

1. **Equipment service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **When servicing equipment, use only identical replacement parts. Follow instructions in the “Inspection, Maintenance, And Cleaning” section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.
8. Do not touch the Battery Charger cable clamps together when the charger is plugged in; touching the cable clamps together may cause personal injury.
9. Do not touch eyes after working with a lead-acid battery. Wash hands thoroughly with soap and water. If battery fluids contact the skin, face, or eyes, immediately flush with plenty of fresh water. Then, contact a doctor.
10. Do not smoke around a charging battery.

## **Additional Battery Charger Safety Precautions**

1. This Battery Charger must only be used on lead-acid, rechargeable type batteries. Do not use this Battery Charger to charge household, dry-cell batteries. Dry-cell batteries may explode causing personal injury or property damage.
2. Do not use the Battery Charger as a low voltage system power supply except in automotive applications.
3. Do not try to start the automobile engine when the Battery Charger is connected to the battery. It may damage the unit.
4. Charge a lead-acid battery only in a well-ventilated area as explosive gases may be produced during charging.
11. Make all Cable Clamp connections before plugging in the Battery Charger.
12. Remove all metal objects (including tools and other personal objects, i.e., watch) from around the battery being charged.
13. Battery must be vented and maintenance-free (non-fillable) battery. Vents must be clear and dirt free.
14. Use this product in accordance with the battery's and vehicle's instruction manual recommendations, safety warnings and charging instructions.
15. Do not leave Battery Charger unattended.
16. Batteries can explode under certain conditions; excessive heat and/or poor ventilation can cause explosive gas buildup and battery explosion. Surges in electrical power sup-

ply could possibly cause battery explosion. Battery Charger should be plugged into a surge protection device.

17. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
18. **WARNING:** Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, et seq.)

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## GROUNDING

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### **⚠️ WARNING**

**Improperly connecting the**

**grounding wire can result in electric shock.**

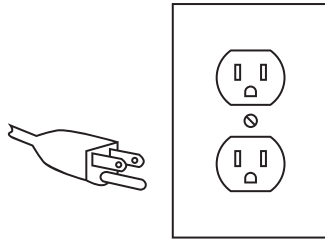
**Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.**



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## **Grounded Tools: Tools with Three Prong Plugs**

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### **3-Prong Plug and Outlet**

1. Tools marked with “Grounding Required” have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See 3-Prong Plug and Outlet.)**
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool’s grounding system and must never be attached to an electrically “live” terminal. **(See 3-Prong Plug and Outlet.)**
3. The tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the preceding illustration. **(See 3-Prong Plug and Outlet.)**

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## **Extension Cords**

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1. **Grounded** tools require a three wire extension cord. **Double Insulated**






tools can use either a two or three wire extension cord.

2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Table A.)**
6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.
7. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)					
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25'	50'	75'	100'	150'
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-
* Based on limiting the line voltage drop to five volts at 150% of the rated amperes.					

**TABLE A**

### Symbology

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
	Volts Alternating Current
	Amperes
$n_0$ xxxx/min.	No Load Revolutions per Minute (RPM)

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## UNPACKING

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When unpacking, make sure that the Battery Charger is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.

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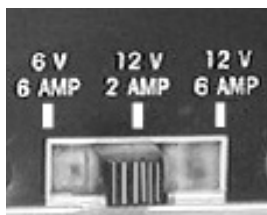
## OPERATION

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1. Place the Battery Charger about six feet from the battery being charged.  
**Note:** This Battery Charger is NOT for use on DEAD or DAMAGED batteries.
2. To **CHARGE A BATTERY**, verify that the ignition is off, remove vehicle's cables from battery, then connect the positive (Red with +) Cable Clamp to the positive (+ or P) terminal of the battery.  
If necessary, clean the battery terminals. Wiggle the Cable Clamp on the battery terminal to get a good connection.
3. Connect the negative (Black with -) to the negative battery terminal.  
**Note:** Battery clamps must be connected properly or the battery charger will not operate and charge battery. There is no voltage at the clamps when disconnected from the battery.

Battery Voltage	Switch Setting	Charging Time	Typical Battery Uses
12 V	Right (12 V, 6 A)	6 to 8 hours	Vehicles, machinery with large engines
12 V	Center (12 V, 2 A)	3 to 8 hours	Motorcycles, snowmobiles, small engines. <b>For batteries rated at 28 Ah.</b>
6 V	Left (6 V, 6 A)	6 to 8 hours	Vehicles, machinery with large engines using 6 volt battery

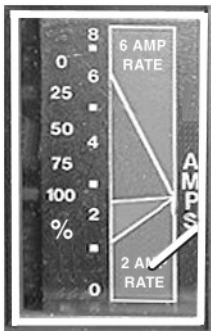
4. Set the Battery Charger switch to the proper setting for the type battery being charged. Refer to the table above.



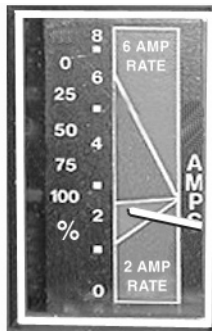
Mode Switch

5. With the Battery Clamps in place, and the Mode Switch correctly set, plug the 3-prong line cord into a grounded electrical outlet or extension cord.

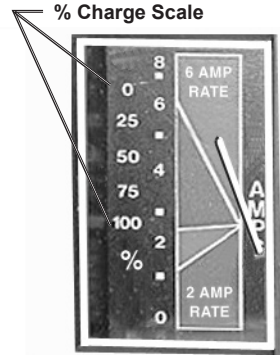
6. The Battery Charger is now supplying charging current to the battery. View the Ammeter to see the amount of charging current.



Fully Charged



Charging at full 2 amps



Charging at full 6 amps

The ammeter displays the amount of current draw of the battery. As the battery charges, it draws less current. The ammeter indicator moves down as the battery charges. When it reaches the green area of the ammeter, the battery is charged. When the charge setting is 12 volts, 6 amps, the percentage (%) charge scale can be read as an indication of the charge.


7. For 12V settings only: When the battery is fully charged, the battery charger will cut-off the charging current and switches to float charge maintenance mode. While in the float charge maintenance mode, the charger will cycle ON and OFF between preset cut-in and cut-off voltages to prevent overcharging and to compensate for battery self-discharge. **Note: When set in 6 volt mode, the Battery Charger will not automatically switch to standby mode; it must be manually turned off.**
8. Remove the negative (black) Cable Clamp from the battery.
9. Remove the positive (red) Cable Clamp from the battery.



## MAINTENANCE

1. Using a clean cloth, wipe the Cable Clamps and charger of all grease and dirt.
2. Coil all cables.
3. Store the Battery Charger in a clean and dry location.
4. If any cable insulation becomes cracked and exposes copper wire, have it repaired or replaced by a qualified technician.

### Troubleshooting

Problem	Possible Causes	Likely Solutions
Maximum ammeter reading	Defective battery	Check and/or replace battery
No ammeter reading	<ol style="list-style-type: none"> <li>1. No power to charger</li> <li>2. Battery cable clamps not connected to battery properly</li> <li>3. Defective battery</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power cable and outlet connections</li> <li>2. Clean battery terminals and reset cable clamps</li> <li>3. Check and/or replace battery</li> </ol>
Charging current not to full output	<ol style="list-style-type: none"> <li>1. Battery is partially charged</li> <li>2. Defective battery, will not hold full charge</li> </ol>	<ol style="list-style-type: none"> <li>1. Continue charging</li> <li>2. Check and/or replace battery</li> </ol>
Ammeter needle moves up to full charge, then drops to zero. Makes clicking noise.	<ol style="list-style-type: none"> <li>1. Battery is completely dead</li> <li>2. Defective battery</li> <li>3. Charger is resetting itself after circuit breaker overload</li> </ol>	<ol style="list-style-type: none"> <li>1. Continue charging battery. Charger will continue to reset itself until the battery charge reaches a chargeable level.</li> <li>2. Check and/or replace battery</li> <li>3. Wait until charger automatically resets itself.</li> </ol>
<div style="display: flex; align-items: center;">  <div> <p><b>Follow all safety precautions whenever diagnosing or servicing the tool.</b></p> <p><b>Disconnect power supply before service.</b></p> </div> </div>		

**Note:** No replacement parts are available for the Battery Charger.

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## LIMITED 90 DAY WARRANTY

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Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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